

Notice of Allowability

Application No.

10/776,239

Examiner

Lisa Herring

Applicant(s)

SAITOH, TATSUHIKO

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12 Feb 2004 and Telephone Interview 7/25/05.
2. ☒ The allowed claim(s) is/are 1-5.
3. ☒ The drawings filed on 11 March 2005 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 16 Aug 2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date N/A
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Arthur Steiner on July 25, 2005.

The application has been amended as follows:

Please amend the claims as follows:

Claim 1 has been rewritten as follows: (Note: claim 1 has been rewritten to remove the extraneous periods after the equation)

1. (Currently Amended) A method of elongating a glass preform, comprising:

holding both ends of a glass preform having holes extending in the longitudinal direction by a first holding member and a second holding member, respectively; and

successively heat-melting the glass preform from an end thereof by a heating means while increasing the distance between the first holding member and the second holding member in the longitudinal direction of the glass preform so as to elongate the glass preform;

wherein the glass preform is elongated by heat-melting with the heating means so that the temperature T satisfies a relation by Eq. 1

$$11[^\circ\text{C}/\text{mm}] \cdot D[\text{mm}] + 860[^\circ\text{C}] < T[^\circ\text{C}] < 17[^\circ\text{C}/\text{mm}] \cdot D[\text{mm}] + 880[^\circ\text{C}] \quad (1)$$

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where D is the outer diameter of a post-elongation glass preform, and T is the maximum temperature of a softened portion of the glass preform (pre-elongation) heat-melted by the heating means.

Claim 3 has been rewritten as follows: (Note: claim 3 has been rewritten to remove the extraneous periods after the equation)

3. (Currently Amended) A method of elongating a glass preform according to claim 1 or 2, wherein the glass preform is elongated in a manner such that the relationship Eq. 2 is satisfied:

$$0.6 \cdot S[\text{mm}] < D[\text{mm}] < 0.98 \cdot S[\text{mm}] \quad (2)$$

where S is the outer diameter of the glass preform (pre-elongation) and D is the outer diameter of the post-elongation glass preform.

Claim 4 is amended as follows:

4. (Currently Amended) A method of elongating a glass preform according to ~~any one of claims 1 to 3~~ claim 1 or 2, wherein the glass preform is elongated while a gas is passed through the holes thereof.

New Claim 5 has been added.

5. (New) A method of elongating a glass preform according to claim 3, wherein the glass preform is elongated while a gas is passed through the holes thereof.

Reasons for Allowance

2. The following is an examiner's statement of reasons for allowance: Berkey et al. (2004/0050110) discloses elongating a preform having holes as a redraw process, but fails to disclose any details of the elongation process (paragraph [0052] and Fig. 1).

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Singer, Jr. (4,127,398) also discloses heating an array of tubes, which forms a glass preform having holes extending in the longitudinal direction, and elongating the preform by a first holding member and a second holding member by drawing wheels, but fails to disclose the distance between the first holding member and the second holding member are increased and fails to suggest the glass preform is elongated by heat melting with the heating means so the temperature T satisfies the equation recited in claim 1 (fig. 6). Kenmochi et al. (6,178,778) and Hoshino et al. (5,755,849) discloses elongating a preform by measuring the diameter of the preform in the softened portion of the glass preform and adjusting the speed during elongation in order to reduce diameter fluctuations in the resultant elongated preform. However both references fail to disclose holes in the preform, and the heating means so the temperature T satisfies the equation recited in claim 1. Tsuda et al. discloses elongating a preform by measuring the diameter before and after elongation and adjusting the speed during elongation, and also fails to disclose holes in the preform and any relationship with the temperature T that satisfies the equation recited in claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Herring whose telephone number is 571-272-1094. The examiner can normally be reached on Mon-Fri. 7:30 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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